

CLAIMS

1. A product design support system that supports a user in designing a product and has a structure (1, 2) which collectively manages information on a product to facilitate designing of said product or extracts information for making said product compatible with a predetermined specification.

2. The product design support system that supports a user in designing a product according to claim 1, comprising:

storage means (2) including parts-information storage means (22) which stores parts information on parts constituting a product, parts-image-information storage means (23) which stores parts image information on parts stored in said parts-information storage means (22), product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22), and product-image-information storage means (25) which stores product image information on said product stored in said product-information storage means (24);

specification acquisition means (1) which acquires specification information designating a specification of a product to be designed;

compatible-product-information extraction means (1) which extracts from said storage means (2) information on a product compatible with said specification designated by said specification information acquired by said specification acquisition means (1) and/or information on parts to be constituting elements of said product compatible with said specification; and

information transmission means (1) which transmits information extracted by said compatible-product-information extraction means (1) to a user terminal (4) of said user, whereby information on a product is collectively managed to facilitate designing of said product.

3. The product design support system according to claim 2, wherein said compatible-product-information extraction means (1) selects product information on a

product having functions designated by said specification information acquired by said specification acquisition means (1), and parts information on parts to be constituting elements of that product from said storage means (2), executes simulation to discriminate whether a product which is obtained by replacing constituting elements of said product indicated by said selected product information compatible with a specification designated by said specification information or not, and extracts information on a product compatible with said specification designated by said specification information and/or information on parts to be constituting elements of said product compatible with said specification based on results of said simulation.

4. The product design support system that supports a user in designing a product according to claim 1, comprising:

storage means (2) including parts-information storage means (22) which stores parts information on parts constituting a product, parts-image-information storage means (23) which stores parts image information on parts stored in said parts-information storage means (22), product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22), and product-image-information storage means (25) which stores product image information on said product stored in said product-information storage means (24);

acquisition means (1) which acquires said parts information, said product information and their image information; and

update means (1) which updates information stored in said storage means (2) based on said information acquired by said acquisition means (1), whereby information on a product is collectively managed to facilitate designing of said product.

5. The product design support system that supports a user in designing a product according to claim 1, comprising:

parts-information storage means (22) which stores parts information on parts constituting a product;

parts-image-information storage means (23) which stores parts image information on parts stored in said parts-information storage means (22);

product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22);

5 product-image-information storage means (25) which stores product image information on said product stored in said product-information storage means (24);

restriction information storage means (26) which stores information on a design restriction in product designing; and

achievement information storage means (24) which stores achievement information
10 on characteristics of said product stored in said product-information storage means (24), whereby information on a product is collectively managed to facilitate designing of said product.

6. The product design support system according to claim 5, wherein said achievement information includes physical property values of a product and a
15 manufacturing cost of said product.

7. The product design support system according to claim 5, further comprising simulation means (1) which simulates characteristics of a designed product based on said achievement information stored in said achievement information storage means (24).

8. The product design support system according to claim 7, further comprising
20 simulation information transmission means (1) which transmits simulation information on results of simulation done by said simulation means (1) to a user terminal (4) of said user.

9. The product design support system that supports a user in designing a product according to claim 1, comprising:

parts-information storage means (22) which stores parts information on parts
25 constituting a product;

parts-image-information storage means (23) which stores parts image information on parts stored in said parts-information storage means (22);

product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22);

product-image-information storage means (25) which stores product image information on said product stored in said product-information storage means (24);

5 product specifying means (1) which allows said user to specify a predetermined product from products stored in said product-information storage means (24); and

product-information providing means (1) which transmits at least one of said product information stored in said product-information storage means (24) and said product image information stored in said product-image-information storage means (25), for a
10 product specified by said product specifying means (1), to a user terminal (4) of said user to provide said user with said transmitted product-related information, whereby information on a product is collectively managed to facilitate designing of said product.

10. The product design support system according to claim 9, wherein said product image information stored in said product-image-information storage means (25) is stored in
15 association with said product information stored in said product-information storage means (24) and said parts image information stored in said parts-image-information storage means (23).

11. The product design support system according to claim 9, wherein said product specifying means (1) can specify a plurality of products from products stored in said
20 product-information storage means (24).

12. The product design support system according to claim 9, further comprising:

parts specifying means (4, 1) which allows said user to specify a predetermined product from parts constituting said product specified by said product specifying means (1);
and

25 parts-information providing means (1) which transmits at least one of said parts information stored in said parts-information storage means (22) and said parts image information stored in said parts-image-information storage means (23), for a part specified

by said parts specifying means (4, 1), to said user terminal (4) of said user to provide said user with said transmitted parts-related information.

13. The product design support system according to claim 9, further comprising restriction information storage means (26) which stores information on a design restriction
5 in product designing.

14. The product design support system according to claim 5, further comprising peculiar restriction information storage means (26) which stores information on a peculiar restriction on a predetermined product in product designing.

15. The product design support system according to claim 2, wherein said product
10 is an electric circuit,

said product information stored in said product-information storage means (24) includes a parts table of said electric circuit, and

said product image information stored in said product-image-information storage means (25) includes a circuit diagram.

16. The product design support system that supports a user in designing a product
15 according to claim 1, comprising:

specification acquisition means (1) which acquires specification information designating a specification of a product to be designed;

compatible-product-information extraction means (1) which is connected to an
20 external storage device (2) including a parts-information storage section (22) which stores parts information on parts constituting a product, a parts-image-information storage section (23) which stores parts image information on parts stored in said parts-information storage section (22), a product-information storage section (24) which stores product information on said product formed by said parts stored in said parts-information storage section (22),
25 and a product-image-information storage section (25) which stores product image information on said product stored in said product-information storage section (24), and extracts from said external storage device (2) information on a product compatible with said

specification designated by said specification information acquired by said specification acquisition means (1) and/or information on parts to be constituting elements of said product compatible with said specification; and

information transmission means (1) which transmits information extracted by said compatible-product-information extraction means (1) to an external user terminal (4) of said user, whereby information on a product is collectively managed to facilitate designing of said product.

17. The product design support system that supports a user in designing a product according to claim 1, comprising:

compatible-product-information extraction means (1) which extracts, from an external storage device (2) including a parts-information storage section (22) which stores parts information on parts constituting a product, a parts-image-information storage section (23) which stores parts image information on parts stored in said parts-information storage section (22), a product-information storage section (24) which stores product information on said product formed by said parts stored in said parts-information storage section (22), and a product-image-information storage section (25) which stores product image information on said product stored in said product-information storage section (24), said parts information, said product information and their image information; and

update means (1) which updates information stored in said external storage device (2) based on said information acquired by said acquisition means (1), whereby information on a product is collectively managed to facilitate designing of said product.

18. The product design support system that supports a user in designing a product according to claim 1, comprising:

product specifying means (1) which allows said user to specify a predetermined product from products stored in an external product-information storage device (24) that stores product information on a product to be formed by parts; and

product-information providing means (1) which transmits at least one of said

product information stored in said external product-information storage device (24) and said product image information stored in an external product-image-information storage device (25) that stores product image information of said product stored in said external product-information storage device (24), for a product specified by said product specifying means (1), to an external user terminal (4) of said user to provide said user with said transmitted product-related information, whereby information on a product is collectively managed to facilitate designing of said product.

19. A product design support method that supports a user in designing a product and includes a step (1, 2) of collectively managing information on a product to facilitate designing of said product or extracting information for making said product compatible with a predetermined specification.

20. The product design support method that supports a user in designing a product according to claim 19, comprising:

a storage step (2) including a parts-information storage step (22) of storing parts information on parts constituting a product, a parts-image-information storage step (23) of storing parts image information on parts stored at said parts-information storage step (22), a product-information storage step (24) of storing product information on said product formed by said parts stored at said parts-information storage step (22), and a product-image-information storage step (25) of storing product image information on said product stored at said product-information storage step (24);

a specification acquisition step (1) of acquiring specification information designating a specification of a product to be designed;

a compatible-product-information extraction step (1) of extracting information on a product compatible with said specification designated by said specification information acquired at said specification acquisition step (1) and/or information on parts to be constituting elements of said product compatible with said specification; and

an information transmission step (1) of transmitting information extracted at said

compatible-product-information extraction step (1) to a user terminal (4) of said user, whereby information on a product is collectively managed to facilitate designing of said product.

21. The product design support method according to claim 20, wherein at said compatible-product-information extraction step (1), product information on a product having functions designated by said specification information acquired at said specification acquisition step (1) and parts information on parts to be constituting elements of that product are selected, simulation to discriminate whether a product which is obtained by replacing constituting elements of said product indicated by said selected product information compatible with a specification designated by said specification information or not is executed, and information on a product compatible with said specification designated by said specification information and/or information on parts to be constituting elements of said product compatible with said specification based on results of said simulation is extracted.

22. The product design support method that supports a user in designing a product according to claim 19, comprising:

a storage step (2) including a parts-information storage step (22) of storing parts information on parts constituting a product, a parts-image-information storage step (23) of storing parts image information on parts stored at said parts-information storage step (22), a product-information storage step (24) of storing product information on said product formed by said parts stored at said parts-information storage step (22), and a product-image-information storage step (25) of storing product image information on said product stored at said product-information storage step (24);

an acquisition step (1) of acquiring said parts information, said product information and their image information; and

an update step (1) of updating information stored at said storage step (2) based on said information acquired at said acquisition step (1), whereby information on a product is

collectively managed to facilitate designing of said product.

23. The product design support method that supports a user in designing a product according to claim 19, comprising:

a parts-information storage step (22) of storing parts information on parts
5 constituting a product;

a parts-image-information storage step (23) of storing parts image information on parts stored at said parts-information storage step (22);

a product-information storage step (24) of storing product information on said product formed by said parts stored at said parts-information storage step (22);

10 a product-image-information storage step (25) of storing product image information on said product stored at said product-information storage step (24);

a restriction information storage step (26) of storing information on a design restriction in product designing; and

an achievement information storage step (24) of storing achievement information
15 on characteristics of said product stored at said product-information storage step (24), whereby information on a product is collectively managed to facilitate designing of said product.

24. The product design support method according to claim 23, wherein said achievement information includes physical property values of a product and a
20 manufacturing cost of said product.

25. The product design support method according to claim 23, further including a simulation step (1) of simulating characteristics of a designed product based on said achievement information stored at said achievement information storage step (24).

26. The product design support method according to claim 25, further including a
25 simulation information transmission step (1) of transmitting simulation information on results of simulation done at said simulation step (1) to a user terminal (4) of said user.

27. The product design support method that supports a user in designing a product

according to claim 19, comprising:

a parts-information storage step (22) of storing parts information on parts constituting a product;

5 a parts-image-information storage step (23) of storing parts image information on parts stored at said parts-information storage step (22);

a product-information storage step (24) of storing product information on said product formed by said parts stored at said parts-information storage step (22);

a product-image-information storage step (25) of storing product image information on said product stored at said product-information storage step (24);

10 a product specifying step (1) of allowing said user to specify a predetermined product from products stored at said product-information storage step (24); and

a product-information providing step (1) of transmitting at least one of said product information stored at said product-information storage step (24) and said product image information stored at said product-image-information storage step (25), for a product specified at said product specifying step (1), to a user terminal (4) of said user to provide said user with said transmitted product-related information, whereby information on a product is collectively managed to facilitate designing of said product.

28. The product design support method according to claim 27, wherein said product image information stored at said product-image-information storage step (25) is stored in association with said product information stored at said product-information storage step (24) and said parts image information stored at said parts-image-information storage step (23).

29. The product design support method according to claim 27, wherein at said product specifying step (1) a plurality of products from products stored at said product-information storage step (24) can be specified.

30. The product design support method according to claim 27, further including:

a parts specifying step (4, 1) of allowing said user to specify a predetermined part

from parts constituting said product specified at said product specifying step (1); and

a parts-information providing step (1) of transmitting at least one of said parts information stored at said parts-information storage step (22) or said parts image information stored at said parts-image-information storage step (23), for a part specified at said parts specifying step (4, 1), to said user terminal (4) of said user to provide said user with said transmitted parts-related information.

31. The product design support method according to claim 27, further including a restriction information storage step (26) of storing information on a design restriction in product designing.

32. The product design support method according to claim 23, further including a peculiar restriction information storage selected (26) of storing information on a peculiar restriction on a predetermined product in product designing.

33. The product design support method according to claim 20, wherein said product is an electric circuit,

said product information stored at said product-information storage step (24) includes a parts table of said electric circuit, and

said product image information stored at said product-image-information storage step (25) includes a circuit diagram.

34. A program for allowing a computer to function as a product design support system that supports a user in designing a product and has a structure (1, 2) which collectively manages information on a product to facilitate designing of said product or extracts information for making said product compatible with a predetermined specification.

35. The program according to claim 31 for allowing said computer to function as a product design support system that supports a user in designing a product and comprises:

storage means (2) including parts-information storage means (22) which stores parts information on parts constituting a product, parts-image-information storage means (23) which stores parts image information on parts stored in said parts-information storage

means (22), product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22), and product-image-information storage means (25) which stores product image information on said product stored in said product-information storage means (24);

5 specification acquisition means (1) which acquires specification information designating a specification of a product to be designed;

compatible-product-information extraction means (1) which extracts from said storage means (2) information on a product compatible with said specification designated by said specification information acquired by said specification acquisition means (1)
10 and/or information on parts to be constituting elements of said product compatible with said specification; and

information transmission means (1) which transmits information extracted by said compatible-product-information extraction means (1) to a user terminal (4) of said user, whereby information on a product is collectively managed to facilitate designing of said
15 product.

36. The program according to claim 31 for allowing said computer to function as a product design support system that supports a user in designing a product and comprises:

storage means (2) including parts-information storage means (22) which stores parts information on parts constituting a product, parts-image-information storage means
20 (23) which stores parts image information on parts stored in said parts-information storage means (22), product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22), and product-image-information storage means (25) which stores product image information on said product stored in said product-information storage means (24);

25 acquisition means (1) which acquires said parts information, said product information and their image information; and

update means (1) which updates information stored in said storage means (2) based

on said information acquired by said acquisition means (1), whereby information on a product is collectively managed to facilitate designing of said product.

37. The program according to claim 31 for allowing said computer to function as a product design support system that supports a user in designing a product and comprises:

5 parts-information storage means (22) which stores parts information on parts constituting a product;

parts-image-information storage means (23) which stores parts image information on parts stored in said parts-information storage means (22);

10 product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22);

product-image-information storage means (25) which stores product image information on said product stored in said product-information storage means (24);

restriction information storage means (26) which stores information on a design restriction in product designing; and

15 achievement information storage means (24) which stores achievement information on characteristics of said product stored in said product-information storage means (24), whereby information on a product is collectively managed to facilitate designing of said product.

20 38. The program according to claim 31 for allowing said computer to function as a product design support system that supports a user in designing a product and comprises:

parts-information storage means (22) which stores parts information on parts constituting a product;

parts-image-information storage means (23) which stores parts image information on parts stored in said parts-information storage means (22);

25 product-information storage means (24) which stores product information on said product formed by said parts stored in said parts-information storage means (22);

product-image-information storage means (25) which stores product image

information on said product stored in said product-information storage means (24);

product specifying means (1) which allows said user to specify a predetermined product from products stored in said product-information storage means (24); and

- 5 product-information providing means (1) which transmits at least one of said product information stored in said product-information storage means (24) and said product image information stored in said product-image-information storage means (25), for a product specified by said product specifying means (1), to a user terminal (4) of said user to provide said user with said transmitted product-related information, whereby information on a product is collectively managed to facilitate designing of said product.